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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,345	02/26/2002	Gustav Ruschmann	1704	2767

7590 05/04/2004

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EXAMINER	
RODRIGUEZ, RUTH C	

ART UNIT	PAPER NUMBER
3677	

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,345	RUSCHMANN ET AL.	
	Examiner	Art Unit	
	Ruth C Rodriguez	3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-8 and 10-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-8 and 10-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 April 2004 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 5, 7, 8, 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Murray et al. (US 5,084,963).

A device connects a shaft (32) to a ring magnet (34) (C. 2, L. 49-54 where copper is known to be used a magnet) having an inside face that is in contact with an outside face of the shaft (Fig. 1). There are deformation regions (36) on the outside

face of the shaft by means of which a force-locking engagement assures a rotationally fixed connection of the ring to the shaft (Fig. 1). The deformations regions are impressed by means of at least two impressed features (22) by means of an impressing die (20) into the outside face of the shaft that is to be brought into contact with the inside face of the ring before mounting the ring (Figs. 1-5). The deformations regions are arranged approximately centrally in an axial direction of the outer face of the shaft in a region of the inner face of the mounted ring (C. 3, L. 1-15 and Figs. 1-5). The axial dimensions of the deformation regions are smaller than an axial deformation of the inner surface of the ring magnet (Fig. 1).

Murray also discloses that:

- The deformation regions are distributed regularly in the radial direction over the outside face of the shaft (Fig. 5).
- The deformation regions are formed by at least two impressed features (Figs. 4 and 5).
- The impressed features have a conical shape (Fig. 4).
- The cone of the impressed features is between 50 degrees and 70 degrees, and is preferably 60 degrees (C. 3, L. 29-33 and Fig. 4).
- Characterized in that two of the impressed features at a time are disposed in pairs (Figs. 4 and 5).
- The impressed features are offset by at least 180 degrees from one another (C. 2, L. 35-48).

- The cone of the impressed features is 60 degrees (C. 3, L. 29-33 and Fig. 4).
- Characterized in that the deformation regions are disposed approximately centrally in the axial direction to the inside face (Figs. 1-5).

A device connects a shaft (32) to a ring magnet (34) (C. 2, L. 49-54 where copper is known to be used a magnet) having an inside face that is in contact with an outside face of the shaft (Fig. 1). There are deformation regions (36) on the outside face of the shaft by means of which a force-locking engagement assures a rotationally fixed connection of the ring to the shaft (Fig. 1). The deformations regions are impressed by means of at least two impressed features (22) by means of an impressing die (20) into the outside face of the shaft that is to be brought into contact with the inside face of the ring before mounting the ring (Figs. 1-5). The deformations regions are arranged approximately centrally in an axial direction of the outer face of the shaft in a region of the inner face of the mounted ring (C. 3, L. 1-15 and Figs. 1-5). The at least two impressed features have a conical shape with round surfaces perpendicular to an impression direction (Fig .4).

4. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Murray et al. (US 5,084,963).

A device connects a shaft (4) to a ring magnet (720) having an inside face that is in contact with an outside face of the shaft (Figs. 14 and 15). There are deformation regions (18) on the outside face of the shaft by means of which a force-locking engagement assures a rotationally fixed connection of the ring to the shaft (Figs. 1-15).

The deformations regions are arranged approximately centrally in an axial direction of the outer face of the shaft in a region of the inner face of the mounted ring (Figs. 1-15). The at least two impressed features have a conical shape with round surfaces perpendicular to an impression direction (Fig. 3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray.

Murray discloses a device having all the features listed above in paragraph 3 for the rejection of claim 4. Murray fails to disclose that the maximum diameter of the impressed features is between 1.5 mm and 2.4 mm. However, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have the maximum diameter of the impressed features is between 1.5 mm and 2.4 mm for the device disclosed by Murray because a change in the size of a prior art device is a design consideration within the skill of the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Especially since the applicant states that this dimension is the

preferred dimension but fails to provide any reason why it is best to use this specific dimension.

The same rejection of claim 6 will apply to claim 12 reciting that the maximum diameter of the impressed features is 1.9 mm.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murray in view of Tatsumi et al. (US 4,377,762).

The device disclosed by Murray has all the features listed above in paragraph 3 for the rejection of claim 1. Murray fails to disclose that in addition to the impressed features, radially extending indentations are present on the outside face of the shaft. However, Tatsumi disclose a device connecting a shaft (4) to a ring (720) having an inside face that is in contact with an outside face of the shaft (Figs. 14 and 15). There are deformation regions (18) on the outside face of the shaft by means of which a force-locking engagement assures a rotationally fixed connection of the ring to the shaft (Figs. 1-15). The deformations regions are arranged approximately centrally in an axial direction of the outer face of the shaft in a region of the inner face of the mounted ring (Figs. 1-15). In addition to the impressed features, radially extending indentations (13,14) are present on the outside face of the shaft (Figs. 1-15). The radially extending indentations serve to engage annular stoppers (722,724) to secure the ring (720) on opposite ends of the ring (C. 6, L. 63-68 and C. 7, L. 1-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the to have radially extending indentations present on the outside face of the shaft in accordance with the teachings of Tatsumi in the shaft of Murray. Doing so,

provides additional security to the connection of the shaft and the ring because the radially extending indentation will receive annular stoppers to secure opposite ends of the ring.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 2, 4-8 and 10-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ullom (US 3,872,578), Mazzeo (US 4,089,612), Kanamura (US 4,249,298), Kanamaru et al. (US 4,376,333), Tsumuki et al. (US 4,377,762 and US 4,438,555), Sugiuchi et al. (US 4,620,454), Yamaji et al. (US 4,781,075), Iio (US 4,886,392), Murray (US 5,084,963), Linzell (US 5,348,210), Egner-Walter (US 6,099,195), Aota et al. (US 6,428,236 B2), Suzuki et al. (US 2002/0041790 A1), French Patent Document FR 806,791, Japanese Patent Document JP 55-94740, Japanese Patent Document JP 404277321 A, Japanese Patent Document JP 5-10340, Japanese Patent Document JP 6-200951 and Japanese Patent Document JP 6-221333 are cited to show state of the

art with respect to a device for connecting a ring to a shaft having some of the features claimed under the current application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth C Rodriguez whose telephone number is (703) 308-1881. The examiner can normally be reached on M-F 07:15 - 15:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (703) 306-4115.

Submissions of your responses by facsimile transmission are encouraged. Technology center 3600's facsimile number for before and after final communications is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Ruth C. Rodriguez
Patent Examiner
Art Unit 3677

RCR
rcr
April 29, 2004

ROBERT J. SANDY
PRIMARY EXAMINER